

# AMERICAN RAILROAD JOURNAL,

AND

## ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 30 WALL STREET, AT FIVE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, and  
GEORGE C. SCHAEFFER, } EDITORS AND  
                                      } PROPRIETORS.]

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### AMERICAN RAILROAD JOURNAL.

NEW-YORK, JANUARY 13, 1838.

### TO THE SUBSCRIBERS OF THE RAILROAD JOURNAL.

In resuming again the publication of the Journal, we have to apologize for the long period which has been permitted to elapse without communication with its readers. Its publication was suspended on account of the difficulty of collecting from those indebted to it, an amount sufficient to pay the printer. At the period of its suspension, it was believed and stated, that its publication would be resumed again in *four weeks*, as it was not doubted but that, on learning of its suspension for want of funds, those, at least, who were indebted for *previous* volumes, if not those who had not paid for the *current* volume, would remit immediately the amount due, that it might again resume its course; yet, in this reasonable expectation we have been much disappointed, as the suspension of publication was followed by almost an entire suspension of payments, and we were led to infer that those who had not fulfilled their engagements to us, by prompt payment, were disposed to balance their remissness against our inability to complete a volume which we had commenced, and for which a large number of our more thoughtful and more *fast* subscribers had paid.

It is well known to many of our readers, that the Journal was projected and commenced at a period (December, 1831) when there was comparatively nothing known, and very little information to be obtained, in this country, on the subject

of Railroads—no better evidence of this, assertion need be asked for than can be found in the first, and even the second volume of the Journal. The idea of sustaining the work was ridiculed by many as preposterous, yet it was continued year after year, notwithstanding its current expenses exceeded by several hundred dollars, annually, its income.

It was continued, with a *hope* that it would eventually become profitable, but with a certainty that it would be useful in the great cause of Internal Improvement, from which our country *anticipated*, and has *realized* so much.

When it had nearly completed its 4th volume, and began to yield a small profit, it was involved in total ruin by the Great Conflagration of December, 1835, when its printing materials, and over 400 full sets of the work, were consumed. Determined, however, to continue its publication, if possible, its price was raised to Five Dollars, a measure which was, by almost every subscriber from whom we heard, cheerfully acceded to. Our subscription list was extended, the work increased in usefulness, and we should have continued to the satisfaction of our patrons, if each subscriber had only paid what was already due to us.

As it is, we have been compelled to submit to the most mortifying sacrifices, rendered the more unpleasant by the reflection, that they were caused by the delay and remissness of those who had received and used our Journal without any recompense, in some cases, for the labor of years.

We cannot in justice to ourselves omit this opportunity of returning our most heartfelt thanks to those of our friends, who have *always* been prompt in their payments and endeavours to assist us.

It is not our intention to continue a large unpaid circulation, and we shall thus be better able to send our Journal with punctuality to such as pay for it.

Volume Six will be completed as speedily as possible. The next, or Volume for 1838, will be published in a more convenient form for preservation.

TO ENGINEERS, OFFICERS AND DIRECTORS OF PUBLIC WORKS—MANUFACTURERS, AND OTHERS ENGAGED IN THE CAUSE OF INTERNAL IMPROVEMENT.

The new year opening with the encouragement that the distressing depression and derangement of affairs which has operated to the disadvantage of Public Works, as well as to our own loss and disappointment, will soon pass away, it is our desire to obtain and circulate as much information as possible, in regard to Internal Improvement.

The severe ordeal of the past season has established the entire confidence of the public in the usefulness and substantial character, in a financial point of view, of our Railroads, Canals, &c.

We invite the earliest attention to our request, to furnish us with all information in regard to such works as each individual is, or may have been engaged upon.

We desire to learn in regard to Railroads:—

The date and conditions of their charter and organization, length of line, and termination.

Amount and cost of grading, its character, information relative to tunnels, &c.

Cost and construction of bridges.

Cost and nature of superstructure, the form, weight and arrangement of the rail.

Cost and extent of depots.

Number and size of Locomotives, by whom made, their power, cost, &c.

Cost per mile of the Road when complete.

Nature and extent of traffic, with all other particulars in reference to the work, which are of interest to engineers and stockholders.

Of work in progress—we desire to



know what has been done, and to be informed from time to time of the progress and prospects of the undertaking.

We also ask for similar information in regard to Canals.

Of Manufactories, we wish the location, the amount and extent of business, particularly those engaged in the construction of Locomotives, Railroad and other machinery.

The value and importance to all parties of such information, is too evident to be insisted upon at this time.

To all who remit us Fifteen Dollars, in advance, we will furnish a copy of the work, and continue an advertisement, equal to one square, in our columns for a year. Railroad companies, as well as manufacturers of Machinery, will unquestionably find their interest in accepting this offer. If generally accepted, the Railroad Journal may be considered as permanently established.

Since our last publication, we have received several reports and other interesting communications, which we hasten to lay before our readers. Several of them we give in this No. with an apology for their late appearance.

We have also been much gratified by our visits to several new and valuable machines, &c. which we desire to notice in our next. We have received the following reports:—

South Carolina Canal and Railroad Company.

Sandy and Beaver Canal.

Ohio Railroad.

Buffalo and Erie Railroad, (Preliminary Surveys.)

Survey of the Valley Railroad, Vermont.

Montgomery Railroad.

Charleston and Cincinnati Railroad.

Several others, which we understand have been sent to us, have been mislaid, or have never reached us—we request in such cases a renewal of the favor.

We are much obliged to the writers of the following letters. We wish to receive similar communications from every Engineer in the United States—they are of great service.

Athens, Tenn. Aug. 18, 1837.

DEAR SIR,—The grading of the Hiwassee Railroad has been commenced, at a point two miles below the town of Athens, by Mr. Kennedy Lonergan, the able contractor from the Philadelphia and Baltimore Railroad. A corps of Engineers, under Col. Long, are now making a survey for the junction of the

Hiwassee Railroad with those of Georgia. Upon this junction, the cotton growing portions of Georgia depend for the ready receipt of provisions from East Tennessee. The intention of Alabama in effecting a union with the Hiwassee Railroad, is also, in a great measure, attributable to the same source; together with the increased facilities in the North East and South travelling. The Coosa and Wetumpka Railroad will, by its junction with the Hiwassee Railroad, open markets for the produce of East Tennessee at Mobile, New-Orleans, and other shipping ports.

Yours, respectfully,

JOHN C. TRAUTWINE.

D. K. MINOR, Esq.

Extract from a letter to the Editors of the Railroad Journal.

I have completed the Survey of Route of the Selma and Tennessee Railroad. The Route is uncommonly favorable. Nature had prepared a succession of valleys, for 150 miles, presenting a surface of unexampled uniformity. The whole estimated expense of the 150 miles is not \$1,500,000, and yet it is perhaps the most important route in the Southern States.

The Montgomery Railroad is going on finely. We weathered the storm, however, with some difficulty. We have made an arrangement with the Pensacola Company, by which, on condition that we allow them to bring their Railroad from Pensacola to Montgomery, instead of Columbus, they have taken \$200,000 of our Stock, and lent us of Iron now on hand sufficient for the first 40 miles. You will thus perceive that the great route from New-Orleans will be through Pensacola, Montgomery and West Point, Madison, Gainsboro, Augusta and Charleston, by a continued line of Railroad. It is my opinion that this line of Road will be as good Stock as any in the United States; and the Montgomery and West Point Road the most profitable link in the chain.

For the Railroad Journal.

THE MOUNT CARMEL AND NEW ALBANY RAILROAD.

Princeton, Indiana, Nov. 1837.

Through the efforts of two enterprising citizens of Illinois, Mr. George Flower, of Albion, and the Rev. Thomas S. Hinds, of Mount Carmel, a convention of delegates was got up at Jasper, in the State of Indiana, in November last, for the purpose of applying to the Legislature of the last named state, for a Charter for a Railroad, to connect the places named at the head of this article. Application was made, and the Legislature granted a very liberal charter, to continue in force and have existence for seventy-five years. Capital, a million and a half, with the power granted to the Board of Directors to increase the same to an indefinite amount, if it should become necessary to complete the work.

The power is also given the company to construct lateral branches, so as to accommodate points on either side of the main work—the work to be commenced in five, and completed within fifteen years. There is yet another provision, which is deemed of itself a sufficient bonus, to induce capitalists to embark in the enterprise, and that is, the right which is invested in the company, to purchase, hold, sell, and convey any lands, or real estate, they can purchase in the State of Indiana. The distance from New Albany to Mount Carmel is upwards of one hundred and twenty miles—two-thirds of the lands over which, and adjacent to the contemplated route, belong to the United States, and may be purchased at one dollar and twenty-five cents per acre. Were the company to purchase a million of acres of the lands adjacent to the work, the increase alone in the price of those lands so purchased, would, before the work is half completed, pay for the entire construction of the work. The bare location of the route will triple the price of every acre of land within two miles of it. All that is wanted is capital to invest in lands, and go on with the work for a short time without being compelled to make sale of them.

It is to be recollected, that the State of Illinois has undertaken to construct a railroad from Alton, on the Mississippi, to Mount Carmel on the Wabash. This work is in progress, and no doubt can be entertained of its speedy completion.

By a transient glance at the map, it will be seen that this road must eventually become of more importance than any other work of internal improvement, now contemplated in the Western States. The Nashville railroad, the Charleston railroad, the Baltimore and Ohio railroad, the Pennsylvania railroad and canal, the Cleveland and Portsmouth canal, and the numerous railroads now in progress to connect the Northern Lakes with the Ohio river, all converge to a focus at Louisville, forming tributaries to this great road, which, crossing the fertile state of Indiana, intersects first the Central canal, then the Evansville and Vincennes railroad, and strikes the Wabash at the mouth of White River, and at the foot of the grand rapids, passing through the town of Mount Carmel, where the unlimited water power may be presumed of itself sufficient to afford a valuable portion of transportation business, it proceeds through the prairie regions of Illinois, intersects near the meridian line, the Central railroad running through that state north and south, and terminating at the Mississippi, forms as at Louisville, a point, uniting tributary means of conveyance from every direction from the north-east by the Illinois river, from the north by the Mississippi river, from the north-west by the Missouri river, from the south by the Mississippi, and will extend its ramifications through the east and fertile regions of the west.

INDIANA.



To the Editor of the Railroad Journal.

Auburn, Aug. 14, 1837.

GENTLEMEN,—In a report made to the Directors of the Auburn and Syracuse Railroad Co. by Judge Miller and myself, recently published, I perceive an error has crept in, which I ask the privilege of correcting through your columns.

The report was put in type at New-York, and neither of the committee had an opportunity of examining the proof. This will account for the error of which I speak, as well as various others, typographical. In the report as printed, it is stated that the Utica and Syracuse Railroad Co. cannot by their charter carry freight upon their road. It will be found by reference to the act of incorporation, that they are allowed this privilege—paying toll upon property during the period in which the Canal shall be navigable.

The committee deem it due to the Syracuse and Utica Co. and themselves, to make this correction. You will oblige me by giving this publicity.

Your obedient servant,

S. A. GOODWIN.

From the Baltimore Gazette.

One of the principal difficulties in the use of that portion of the Baltimore and Ohio Railroad already constructed, is the grade of inclined planes on each side of Parr's Ridge, which has been supposed to be too great for the beneficial use of locomotive engines, and much expense has therefore been and yet is daily incurred by the use of horse power, on passing the cars of every description, in both directions over the Ridge—a distance of three and a half miles. So great has been the expense and inconvenience resulting from this mode of passing the Ridge, that the directors as we have understood, have had it in contemplation to make a new location of the road on a more circuitous route, so as to reduce the grade, which of course could only be effected at a very heavy expense.

The steepest grade of any part of the railway over the Ridge, is that of plane No. 3, on the western side, which is rather less than TWO HUNDRED AND SIXTY-FOUR FEET IN THE MILE, and that grade extends only thirty-two hundred feet. It will be seen by the annexed paragraph that a locomotive engine, constructed by Mr. William Norris, is capable of transporting a gross weight of forty-eight thousand five hundred pounds with great facility and rapidity up and down a plane of a grade greater (steeper) by one hundred and five feet in the mile, than the greatest which now offers so inconvenient and expensive an obstruction to the use of our road. We may now reasonably hope that both the use of horses and the expense of a new location may be dispensed with, in consequence of the progress of improvement in the construction of locomotives.

The Philadelphia U. S. Gazette has

an account of the extraordinary performance, on Wednesday, of a locomotive engine which had been made by Mr W. Norris, of that city, for the Austrian Government. The engine is intended for a railroad leading from Vienna, and Mr. N. was desirous of making a public trial of its powers, before he sent it to its destination. It had been kept fully employed during the morning of the day appointed for the experiment, and the party assembled to witness its performances had the gratification of seeing it arrive in the city with a train of *forty-one laden burthen cars*.

The party then proceeded to the foot of the inclined Plane, when the Engine with two of the cars and sixty-three passengers ascended to the top in 3 minutes 15 seconds, amid long continued shouts of triumph. The gross weight in motion, (including engine and tender) was 48,500 lbs. The plane is 2800 feet long, and grade 369 feet to the mile. On descending, the load was increased by the addition of more than eighty persons, and this remarkable performance faithfully proved the immense power of the engine, for at three different times this great weight was brought to a dead stand, by the action of the steam alone.

"In the Engines constructed by Mr. Norris, the steam is generated by the agency of wood fuel, which, we learn, propels them at a very economical rate, while it greatly decreases the liability of wear and tear and the cost of repairs."

The following certificate is from the Weigh Master on the Columbia Road.

Philadelphia and Columbia Railroad.

Arrived from the Schuylkill Plane, the Locomotive Philadelphia, (built for the Austrian Government by William Norris of this city) with the following load, viz :

41 cars and load, weighing,	436,705
Tank,	9,000

lbs. 445,705

I certify the above statement to be correct,

WM. B. EMERICK,

Weigh Master P. &amp; C. R. R.

Collector's Office, Phila. Nov. 29, 1837.

The Norwich and Worcester Railroad Company in the prosecution of their work, found upon arriving at Quinebaug Falls, about three miles from this city, an immense mass of rock, lying directly across their contemplated route. On account of its great elevation, it was deemed necessary that it should be *tunnelled*. But upon an attempt to that effect, it was found that a large portion of the rock was of too substantial a character to enable them to do so. They were therefore compelled to open a passage from the foundation to the summit for a distance of 75 feet. Striking finally upon a solid mass of rock, the tunnel was commenced. On Monday the 28th inst. having succeeded, with great labor,

in working a passage through, our citizens generally were politely invited by the Directors of the Company to attend a celebration of its opening. A large assemblage of gentlemen and ladies were present. The ceremonies were commenced upon the summit of the hill through which a passage had been wrought, by a prayer from the venerable Dr Nott, of Franklin. An address was made by Asa Child, Esq. the General Agent of the Company, in which he made a brief statement of the present condition and prospect of the work—yielding just and handsome compliments to the Commonwealth of Massachusetts and the City of Norwich, for the efficient and indispensable aid rendered to the Company, by the loan of their credit at a difficult and trying period of their operations. At the conclusion of these observations, by requesting of the Chairman of the Committee of Arrangement, Col. G. L. Perkins, a large portion of the assemblage descended the hill on the West side, passed through the Tunnel, and reascended on the East side. They were received by the City Band of Music, by whom they were escorted to a near grove a few rods distant. There a long range of tables were tastefully and bountifully spread with the good things of the land, of which all were invited freely to partake. Taken in connexion with the wild and romantic scenery of the spot, the whole performance was pleasing in a high degree—and we venture to say that all who were present will join with us in tendering thanks to the Directors of the Company, for the handsome entertainment afforded by them, and our best wishes for the success of their enterprise.

The deep cut made to reach the solid rock where the Tunnel was commenced as well as the Tunnel itself, was executed by the enterprising contractor for the New York and Harlem Railroad, Mr. John Rutter, who is already becoming distinguished in colossal works of this description. The Norwich and Worcester Railroad Tunnel is 22 feet wide, 18 feet high, and about 300 feet long, and passes through a bed of hard gneiss similar to the rock of our own Island, of the vein of which it is probably a part. The first drill driven into this tunnel was on the 28th of April last, and the rock was completely perforated on the 27th August following—comprehending a period of 122 days.

A STOCKHOLDER.

From the Courier and Enquirer.

PENNSYLVANIA TRADE AND ITS INCREASE.

The Argus admits that our up trade or tonnage of merchandise on the Erie Canal has fallen off 25 per cent. the last season, but attributes it to a decrease of our imports from England, &c. of 35 per cent. This does not tell the whole truth. Philadelphia has taken a large portion of our business—this is the true secret of the falling off of our tolls, and



the increase of those in Pennsylvania. If any one doubts it, the evidence is to be found in the official report of D. H. Beardsley, Collector at Cleaveland, published in the Herald and Gazette of the 8th Dec.; we there find, that although there is the only difference of clearances for the month of November of 203,860 lbs.—(an increase)—yet in the article of merchandise there is a falling off of more than 50 per cent!! The reports says

"The total amount of pounds cleared the past month on	
"the Canal is	4,897,667
"The corresponding month of	
"November last year	4,693,807
"There is a great falling off in	
"the article of Merchandise.	
"Last year there was cleared	
"in November,	2,609,683
"This November,	1,256,681

Falling off 1,353,002 lbs.

Where has this trade gone to? Look at the map and the position of Cleaveland, and the answer is ready. It has passed through Pennsylvania by her Railroads and early canals, via Portsmouth, on the Ohio, into the interior of that state. Will not this fact, with the rapid strides of Pennsylvania in internal improvements, induce Governor Marcy to recommend the next Legislature, to foster railways, from tide waters to the Upper Lakes? Also, why not at once commence the Ship Canal around Niagara Falls, and a corresponding work from Oswego to the Hudson, so as to convey barges of produce by steam or animal power, from the Lakes to the wharves in New-York? J. E. B.

At all events, let its merits be examined by state surveys.

#### CANAL MEETING.

A meeting was held at P. Goodman's, on Tuesday evening, and delegates were appointed to attend the Canal Convention on the 20th, at Oxford. We cannot give the names of the delegates, as the proceedings have not been handed in.

A committee was appointed to collect all the facts within their reach, relative to the amount of business which will naturally be done on this Canal—such as statistics in regard to Coal, Lumber, Plaster, Salt, Iron, &c. &c.—distances from the Coal and Plaster beds, to give points on the canal—costs of transportation, &c. &c. The committee to re-report at an adjourned meeting, on Monday evening next.

To the Editor of the Courier & Enquirer:

I send you a communication on the subject of internal improvements, to which please call the attention of your readers. In an age like the present, when not only the people, but the government of every country, are alive to the vast importance of internal communications, it will be a singular fact if the legislature of our own State should be

the last to act. Thus far they have not patronized Railroads; although they were the first to exhibit the unparalleled effects of public prosperity by an introduction of a liberal patronage to Canals.

Yours &c. R.

#### INTERNAL IMPROVEMENTS.

The subject of Internal Improvements which has for a long period engaged the undivided attention of most of our sister States, (and of some individuals in our own State,) has at last been introduced in our Common Council by Alderman Bruen, who offered at a late meeting the following resolution:

*Resolved*, That it be referred to an appropriate committee to report a suitable memorial to the Legislature for the establishment of a Board of Commissioners on public works, and for the formation of a liberal plan of internal improvements in this State.

The resolution was adopted, and an able committee consisting of Messrs. Bruen, Robert Smith and Ingraham, appointed. The apathy of New-York on this great and important question has for some time been a matter of surprise to all who have examined the subject, and who are aware what great advantages she has already derived from her public works; which, literally speaking, are on a small scale and of limited extent. So great was this apathy that it was with the greatest difficulty that legislative aid was obtained for the New-York and Erie Railroad Company, one of the most important and deserving corporations in existence.

The movement of Alderman Bruen demonstrates that some effort is to be made to bring about a different state of things; and if it should prove successful (as it doubtless will) we may confidently look forward to the possession and enjoyment of the numerous advantages which a steady and well-directed system of internal improvements cannot fail to impart. I have stated before there is great apathy on this subject. My attention to the relative value or prices of the different railroad stocks in the United States, their cost and income, the support they receive from the people, and the dividends they pay the stockholders, has enabled me to collect a few facts, which I add, to establish the accuracy of this position.

There are now in operation in New-York, on leading routes, numerous railroads, of all which only one, the Utica, is above par in the market; while in the States of Pennsylvania, New-Jersey, Maryland, Delaware, South Carolina, Massachusetts, &c. most of them are at or near par. The average prices would bring them above par—(I take the price as the standard of the support they receive from the public—as price depends in a great measure on their dividends.) Here with our immense travelling, and great transportation, none but the Utica pays a regular dividend—none other, therefore, receives a cordial support.

Why is it so? Is it because there is an antagonist interest at work that operates against the others, or is it because the public, not aware of the great benefits derivable from them, have neglected to employ them? I take the latter to be the true reason. Let us show them, then, what advantages they are throwing away. The Mohawk and Hudson, and the Utica now afford a continued line of communication from Albany to Utica traversable at all seasons, and in all weathers. From Utica, the line will shortly be continued to Rochester. The railroad from Batavia to Buffalo will soon be commenced, the Holland Land Company having generously given all the land required for the road. The funds to pay for the grading and iron will be obtained in Holland, where a loan is in progress of negotiation. Branch roads already connect the principal places out of the regular Western line. Thus it will be seen these companies will in a short time have completed an uninterrupted railroad communication from Albany to Lake Erie, without taxing the public one cent for its construction. The vast savings thereby secured, are fully illustrated by one fact which is mentioned in a late London paper. A statement made by the corporation of the Grand Junction Railway, states that from July 4th to October 4th, 144,818 persons have been conveyed on the road at a cost of \$2,000, less than they would have paid had they travelled in coaches. Not a single accident has occurred on the road during that time."

I have stated what may be looked upon as already done in the way of construction of Railroads—but the great point of consideration is what remains to be done. Although we have, a complete chain of railroad to Lake Erie, yet it is one that cannot be enjoyed by the merchants of this city during an important portion of the year. It still leaves us here, some weeks behind our rivals in the western trade.—There are two modes of placing us, not on an equality, but far ahead of them, both of which should be adopted, as both have peculiar advantages. The one is to prosecute with energy and dispatch the New-York and Erie Railroad. And here let me observe, that though political views should not be mixed up in a measure like this, still much is expected from the whig portion of the present legislature. The confidence of the people in their principles will depend on their action in this respect. One of them is the prosecution of internal improvements; and I call on them, to use a homely proverb, to "practise what they preach." When this great road is completed, it can at a trifling expense be connected with the city itself by an extension of the Harlem Railroad to a point opposite its termination at Tappan. The freight can be transported across the river in the cars, and there need be no unloading until it is deposited in its place of destination. The other mode alluded to, is the construction of the Albany & New-York



road, and for this reason—That will also connect it with the city by the Harlem Railroad, and with it and a road of 80 miles in Connecticut, we extend our communication to Boston by means of the Worcester road.—The importance of this last work is self evident. Thus do we see what great results may flow from fairly carrying out the propositions of the worthy alderman. New-York, with her Railroads extending *North, East and West*, and with her commercial advantages, prosecuting and extending her intercourse with the south and with foreign countries, will then take the station to which the enterprise of her citizens and her *natural position* entitle her. But as long as she neglects to avail herself of these advantages, she is not only allowing less favoured but more industrious rivals to reap them, but is in danger of losing them beyond all hope of recovery. I propose continuing the subject, should my views meet your approbation.

Yours,

R.

## STEAM NAVIGATION TO AMERICA.

Sir,—An article on "Steam Navigation" appeared in a recent number of the *Edinburg Review* (No. 131,) in which the writer endeavours to prove that Dr. Lardner is correct in the conclusion to which he came in his paper on that subject laid before the British Association, Sept. 1836,—viz., that a profitable and permanent connexion could not be effected between New York and England in one trip.

As the subject is one of general interest, and of great importance to the commercial interests of this country in particular, great care should be taken not to discourage the spirit of enterprise, which has prompted three different parties to make the attempt to establish steam communication with the United States, nor to afford an excuse for the East Indian Government to fall back into its former inertness upon the subject of a steam communication with India, now that it has been just roused into action, by the determined and persevering importunity of its subjects there. It is essential to a fair trial of any project, that the best means be employed to accomplish the end designed. If a vessel whose speed is only five miles per hour be employed to perform a certain passage in a given time, when one whose speed is ten miles an hour can be had, it is evident that the experiment is not a fair one. So in reasoning upon the practicability of any scheme, like that of steam navigation to the United States, if a number of vessels be selected whose size, speed and performance, are notoriously less than those of many other vessels which are actually in existence, it is evident that however correctly the size, speed, and performance of the selected vessels may be given, it does not prove that the scheme is impracticable with vessels of larger size, greater speed, and better performance.

The writer of the article "Steam Navigation" in the *Edinburgh Review*, has given us a very full and elaborate table of the consumption of coals, average speed, &c. of eleven steam vessels, from which he most logically and correctly proves, that with such vessels, a steam communication with New York is impracticable. Had his researches been somewhat more extended, it is very possible that he might have found, at least eleven other steam vessels, whose average speed would have shown that instead of twenty-four or twenty-five days, it would not be possible to perform the same distance in fourteen or fifteen days.

The Reviewer states that Mr. Field considers that great improvements have been made in marine engines since 1834. The performance of many of the new steam vessels fully bear out Mr. Field in the opinion which he is said to have given. Yet, by a strange perversity, he adopts as *data* the performance of steam ships, most, if not all of them, built before that time, and concludes, that a steam communication with New York is impracticable!

The Admiralty steamers are the *data* upon which his calculations are made; yet he has not informed us whether they slackened their speed during the night, as I believe is the practice in her Majesty's service.

The writer contends, that any inferences from coast and channel trips are fallacious; but he has not shown us why they are so. It is well known, that on the coast and in the channel, the short cross sea which is so frequent, retards the progress of steam vessels much more than a long rolling sea, and therefore *a priori*, this affords a good test by which to try the performance of a steam vessel.

The use of salt water for raising steam is admitted to be a great obstacle to the performance of long voyages, but it is also admitted, that fresh water may be substituted with good effect; the recent improvements in condensation, warrant us to expect that it may be done with success.

But the great difficulty is, the quantity of coals required, which the Reviewer says, will prove an insuperable obstacle to long voyages. In this particular it seems highly probable that he will be found to be in error, for upon his own showing, the larger vessels require a smaller power in proportion to their tonnage than the smaller ones. And of the vessels which he has selected as the *data* upon which he makes his calculations, there are only three which are now deemed large vessels,—viz., the *Medea* Steam Frigate, of 807 tons; the *Dee*, of 639 tons; and the *Private Steamer A*, of 660 tons. The two first are constructed for war, and are therefore not to be expected to have sufficient capacity for carrying a large supply of fuel; and the *Private Steamer A*, is not sufficiently described, for the public to form any

judgment as to the quantity of fuel she will carry.

The Reviewer states that a steamer of 1,200 tons, with 300 horse power, will only stow 500 tons of coals. In this statement it is evident that he has taken the nominal tonnage as the actual weight she is capable of carrying; whereas, it is usually found that a vessel will carry about 50 per cent. more than her nominal tonnage; thus, a vessel nominally of 1,200 tons is capable of carrying with safety 1,800 tons. If then the power be equal to 300 horses, the weight of the machinery and water will be, say 400 tons. The consumption of coals per day with boilers of the best construction, will be 72,000 lbs. per day, and for fourteen days will be 450 tons, leaving 950 tons for spare coals, merchandise and stores.

Another important feature which has been overlooked, is the fact, that large vessels are propelled at a much greater rate with the same proportion of power to tonnage than smaller ones. Hence, if the *Dundee* and *Perth*, which are about 650 tons, are propelled at the rate of 9.99 miles, nearly ten miles per hour, a vessel of 1,200 tons may be reasonably expected (having the same proportion of tonnage to power) to be propelled at a greater *velocity*, but if, contrary to all experience, she should not go faster, then she would perform the distance between New York and England in fourteen days; and if the currents and winds should be favourable, in much less time, as it is found that with a strong wind in such a direction, that a steamer can set her sails, her speed will be accelerated about a mile, or mile and a half per hour.

Let us take the large steam ship now building in London for the British and American Steam Navigation Company, and try what her capabilities are for performing the intended voyage. Her nominal tonnage is 1,795 tons; she is to be propelled by two engines of 220 horse power each, which will require 47 tons 2 cwt. 3 qrs. 12 lbs. of coal per day of twenty-four hours; if her speed is only nine and a half miles per hour, she will perform the passage in fourteen and a half days, and consume during that period 683 tons 11 cwt. 1 qr. 20 lbs. of coals.

Take the estimate weight of her machinery, boilers and water at 600 tons, and (allowing 50 per cent. on the consumption of coals as a reserve) the weight of fuel at 1,025 tons, we have 1,625 tons for machinery and coals. Now the calculated displacement between the light and load water line amounts to about 2400 tons, thus leaving about 800 tons to be occupied in stores, merchandise and passengers. From a drawing which I constructed, in order to be submitted to the directors, I found by calculation, that with her machinery, coals and merchandise, she would draw only 16 feet of water, if built after my design; and, although built from another design,



I do not think that her draft of water will be greatly different, probably rather more than less, when fully equipped.

Some of your readers may be impatient at this mode of meeting the question and wish for some facts upon which they too may reason and come to a conclusion for themselves.

In 1825, the *Enterprise*, a vessel of about 400 tons, effected her passage from England to Calcutta in 113 days, 64 of which she was propelled by steam, and 49 by sails alone.

In the present year, the *Atalanta* steam ship, of about 650 tons, effected her passage from England to Calcutta in 91 days, 23 of which she was in port, and under weigh 63 days only.

Here then is a striking instance of the improved state of marine steam engines, and of the advantage which a large vessel has over a small one in making her passage. The average speed of the *Enterprise*, taking the distance at 15,000 miles, is  $13\frac{2}{3}$  miles per day, or about  $5\frac{1}{2}$  miles per hour; whilst that of the *Atalanta* is  $22\frac{2}{3}$  miles per day, or  $9\frac{1}{3}$  miles per hour for the whole distance.

The average speed of her Majesty's steam vessels on the Mediterranean station was, some time since, officially stated to be  $7\frac{1}{4}$  miles per hour, which is  $1\frac{1}{4}$  miles more than the average given in the *Edinburgh Review*; taking the highest number as correct, it is much below the rate of most merchant steamers, under much more unfavourable circumstances. For instance, those between Scotland and London come to an average speed of upwards of nine miles per hour; those between Glasgow and Liverpool, perform that passage in, from seventeen to twenty-four hours; and from the books of one company, I found on inspection, that the average time occupied in the passage, both winter and summer, was nineteen hours; and it was thought that some new boats, which were then nearly ready would make the average still less, now the distance by sea being considerably more than 200 miles, the average speed of the steam vessels employed in that trade, must considerably exceed ten miles per hour. The voyages now regularly performed by the merchant steamers to the Peninsula and into the Mediterranean warrant us to expect that a steam communication will be effected with New York in one trip.

It would be unjust not to refer to the *Columbus*, a steam ship, fitting upon Mr. Howard's principle for the purpose of attempting the passage to New York. She is capable, I am informed, of carrying a sufficient quantity of coals to supply the engine for upwards of forty days, and will use *fresh water* only for raising steam.

Excuse my trespassing so long on your time, and believe me,

Yours truly, GEORGE BAYLEY.

#### MEDAL STRIKING.

We have much pleasure in announcing to the friends of the fine arts that

Mr. Pistrucci, chief medallist in the Royal Mint, has discovered a method by which he can stamp a matrix or a punch from a die which has never been touched by an engraver, and shall yet make a medal identically the same with the original model in wax, an operation by which the beauty and perfection of the master's design are at once transferred to any metal, whether gold, silver, or copper, by striking it according to the usual process. It will at once be seen that this is a very different operation from that by which cast medals are manufactured. It is as simple as it is ingenious, and Mr. Pistrucci having no intention of taking out a patent for the discovery, and being anxious to give to the public the full benefit of it, in the different processes of manufacturing plate, jewellery, and all kinds of ornamental work in metal, announces that the whole of the process consists of the following method:—The model being cast in any substance, wax, clay, wood, or other fit material, a mould of it is taken in plaster, from which mould, when dried and oiled to harden it, an impression is taken in sand, or other similar substance which may be preferred, and from this again a cast is obtained in iron as thin as possible, that the work may come up sharply, and the iron attain the hardness almost of a steel die hardened. The cast-iron impression is then flattened mathematically true on the back, and fixed in a steel die, the hollow of which is turned to the exact size of the cast-iron, and it is set within the rim or border, hammered as close as possible, so as to form a collar. The metal upon which the impression is to be struck (to form either the medal itself or a steel matrix, if desired) is to be fashioned into the shape of a cone in the ordinary way, perfectly flat at the base, heated red-hot, and placed at the bottom dish of the press. When the die, fitted as above, having been previously placed at the top dish, and the workmen quite ready to give the blows instantly, three or four, as may be required, a perfect impression of the cast-iron will be attained without the least injury to it. Of course it will be necessary, previous to the die being used for the artist to polish the surface. Mr. Pistrucci's first experiment was successfully performed upon a punch of hard copper, with his model of Sir Gilbert Blane, being nearly three inches in diameter; and he has no doubt that it will equally succeed on a steel punch, perhaps, too, without its being necessary to heat it. When the process above described shall have been brought to the perfection of which it is capable, there can be no doubt that in the execution of works of this description, it will not only be the saving of the labour of months or years in the engraving of dies, and, consequently, of great expense, but the work to be executed will in all points be, in an instant, an exact fac-simile of the original conception of the artist, instead of representing, as at present, merely the handiwork of

the engraver, copied from such original. It will also dispense with the use of very expensive machinery, such as the *tour a portrait*, introduced into the mint by Mr. Pistrucci several years ago, which, however apparently correct in its productions, can never give a perfectly true semblance of the original, even to the limited extent to which it is applicable. And we may possibly be led by it to discover the mode by which the artists of antiquity succeeded in producing these beautiful coins, in which the softness and boldness of the fleshy parts have never yet been equalled by any modern engraver in steel.—*Times*.

#### TELEGRAPHIC COMMUNICATION BETWEEN EDINBURGH AND LONDON.

From the Scotsman.

It has been found by experiments made with a view to ascertaining the velocity of electricity, that it is transmitted instantaneously, by means of a common iron wire, a distance of eight miles; and electricians of the first eminence have declared their opinion that judging from all scientific experience, the electric or galvanic influence would be almost instantaneously transmitted from one end to the other of a metallic conductor, such as ordinary copper wire of moderate thickness, of some hundred miles in length.

If this scientific theory is correct, it follows that a wire, secured by a coating of non-conductors, and protected from external influence or injury, and laid under the turnpike-road between Edinburgh and London, could be the means of distinctly indicating to a person stationed in London, that such wire had been electrified or galvanized in Edinburgh—the transmission of the electric or galvanic influence being clearly discernible by various well known means.

How, then, is this scientific fact to be applied to purposes of practical and general utility? Simply by laying as many wires separated from each other as will correspond to the letters of the alphabet, and preconcerting between the persons stationed at two extremities of the line of communication, that each individual wire is to represent a particular letter; because, if the person stationed in Edinburgh can, by applying the electric influence to any one wire, instantaneously apprise another person stationed in London that a particular letter of the alphabet is thereby indicated, words and sentences *ad infinitum*, may be communicated, and the idea of a perfect telegraph would be realized.

Without experience, it is impossible to say with what rapidity this electro-magnetic telegraph could be worked; but, in all probability, intelligence could be conveyed by such a medium as quickly as it is possible to write, or at least to print; an apparatus could be constructed somewhat resembling the keys of an organ, by which the letters of the telegraph could be touched with the most perfect ease and regularity.



It has been mentioned, that the transmission of the electricity or galvanism could be discernible by various means well known. If any indication, however slight, is made, that is enough, all that is wanted being that it should be perceivable by the person placed to watch the telegraph.

It has been assumed, that the electric current is capable of transmission by means of a single impulse from Edinburgh to London. But it is not indispensable that so great a distance should be accomplished at once. Immediate stations for supplying the telegraph with new galvanic influence could be resorted to, and its perfect efficiency still preserved.

The best mode for troughing or protecting the metallic conductors, and separating them both from each other, and from the surrounding substances by which the electric or galvanic influence might be diverted, would, of course, require considerable scientific and mechanical skill; but the object appears perfectly attainable. Insulating or non-conducting substances, as gumlac, sulphur, resin, baked wood, &c., are cheap; and the insulation might be accomplished in many ways. For example, by laying the wires, after coating them with some non-conducting substances, in layers between thin slips of baked wood, similarly coated, the whole properly fastened together, and coated externally. These slips might be perhaps ten yards long, and at the joinings precautions for the expansion and contraction of the wire by the change of temperature, might be adopted. The whole might be enclosed in a strong oblong trough of wood, coated within and pitched without, and buried two or three feet under the turnpike road.

The expense of making the telegraph proposed is, of course, an important element in the consideration of its practicability and utility.

The chief material necessary, viz., copper wire, is by no means expensive. It is sold at 1s. 6d. per pound, of sixty yards in length. The cost of a wire from Edinburgh to London, say 400 miles, would thus be about 900*l.*; but say for solderings, &c., 100*l.* additional, or that each copper wire, laid from Edinburgh to London, would cost 1000*l.* sterling, and that the total amount of the wires necessary to indicate separately each letter of the alphabet, would be 25,000*l.* The purchase of so large a quantity, would, of course, be made at a considerably less price; but probably one or two additional wires might be needed, and the circuit of the electrical influence must be provided for by one or more return wires.

The coating, separating, and troughing of the wires can be accomplished by low-priced materials, and the total expense of the whole work (except the price of the wires), allowing a large sum for incidental expenditure, has been roughly estimated at 75,000*l.*, making a

maximum expenditure of, say, 100,000*l.* for the completion of the telegraph. For a proportional additional sum it might be extended to Glasgow.

As to the working of the telegraph, it is apprehended, that even if the speed of writing were not attained, there could at least be no difficulty in indicating one letter per second. At this rate, a communication which would contain sixty-five words would occupy about five minutes. This is supposing the vowels to be all indicated. But abbreviation in this, and many other respects, would no doubt be contrived; and the number of words in the communication supposed, are greater than necessary for an ordinary banking or commercial letter, or for friendly enquiries and responses. Supposing, however, that each communication was to occupy five minutes, and to be charged five shillings each, if the telegraph was worked twelve hours a day, (that is, six hours from each end), it would produce a revenue of 36*l.* daily, or 10,800*l.* per annum, supposing there were 300 working days in the year. If, however, the plan is practicable, the public intelligence that would, no doubt, be transmitted by the telegraph would be sufficient to keep it in operation night and day.

Arrangements are being made for having the necessary experiments tried on a metallic conductor of fifty or a hundred miles in length, and if the same instantaneous and perfect indication of the passage of the electric or galvanic fluid is found to take place, as in the case of the recent experiments at the University, the triumph of the scheme would be complete.

#### LIGHT EVOLVED FROM INSECTS.

A singular phenomenon was witnessed on Tuesday evening, in the city of Canterbury. The residents within and near the precincts of the Old Castle, at the southern entrance of the city, were alarmed in the night by a stream of red light, apparently issuing from the old ruins, as if a fire were raging below. On repairing to the spot, it was discovered that the light emanated from an innumerable swarm of small insects, which had collected on the walls and about the old ruins. The moon was not visible, and, with the exception of the spot on which they had located, all was darkness. With the morning sun the little creatures disappeared. About thirty years ago a similar phenomenon was witnessed on these walls.—*Kentish Gazette*.

#### STEAM VESSELS IN SWEDEN.

The progress of Sweden in steam-navigation may be considered as very creditable to that country, when we reflect that in spite of great natural resources, it is at present the poorest in Europe. The number of steam vessels now in activity amounts to twenty-six, of which four belong to the government and twenty-two to private individuals.

The horse-power of the four government steamers is stated at 275, and that of the private ones at only 899;—the average, therefore, for one of the former is 68 horses, and for one of the latter, 40, or one-tenth of the power of the large steamer just launched at Bristol, to run between that port and New-York, three of a similar size to which would exceed in power the whole Swedish twenty-six. Four other steam vessels are now, however, in course of building for the Swedish government, and it is intended to go on gradually adding more and more to the navy.

#### ARSENIC IN CANDLES.

At a late meeting of the Medico-Botanic Society, Mr. Everitt made some remarks respecting the tests for arsenic, and afterwards demonstrated its presence in the composition candles. Having fully proved the existence of the poison in the candle, in the proportion of at least two grains in each (and he stated his belief that four grains were a more correct statement,) he then proceeded to assign a reason for its use. Candles which are made of tallow are of too low a melting point to admit of the use of a curved wick. Stearine or spermaceti, either of which has a much higher melting point, is, therefore, employed in making the composition candles, and to prevent its running into grain or crystalizing, a certain quantity of wax was added, which, it was found, would fully answer the purpose. It was afterwards discovered that a small quantity of arsenic would effect the same object, and it being considerably cheaper, it was adopted into use. The professor further stated that, when he had made the discovery, and it had become bruited abroad, his opinions were confirmed by two or three manufacturers who acknowledged using the poison. He left it to the members of the profession to determine whether arsenic thus volatilized, and coming in contact with the lungs, would prove deleterious. Judging from the effects of other gases, he thought it would be injurious.—*Lancet*.

#### CHINESE LITERATURE.

The study of Chinese appears to be making some progress on the Continent. The Emperor of Russia has appointed a Professor of that language at the University of Kazan, in the person of a Russian missionary long resident at Peking; he has also purchased his Chinese library for three thousand rubles, and assigned him an annual salary of four thousand rubles, or about a hundred pounds sterling more than it is proposed to give the new Professor at the University of our own wealthy metropolis. The latter situation is, it is rumoured, to be offered to Mr. Kidd, now President of the Anglo-Chinese College at Malacca, one of the Chinese pupils of which has lately found employment under the Government of the Celestial empire, as a



translator from the English. At Vienna, also, they are not inactive. Mr. Stephen Endlicher, an industrious and ingenious officer of the Imperial Library, has taken advantage of a recent visit of Baron Schilling de Constadt, the well-known linguist and traveller, whose gigantic stature and proportions found him such favour among the Tibetans, to draw up and publish a catalogue of the Chinese books and coins of the Imperial collection. The number of works, it appears, is 189; the library may perhaps be equal in this department to the British Museum, or even of the East India Company, but is certainly inferior to that of the Asiatic Society, or the London University; and all four of these are in our own capital, now pre-eminent for collections of Chinese literature. With regard to coins, there will probably be no reason for English readers to recur to the pages of Mr. Endliche: a memoir on the subject, embodying information derived from Chinese authorities, by Mr. Samuel Birch, of the British Museum, was recently read before our Numismatical Society.

\*\*\* Subscribers who desire to be supplied with missing numbers, will do well to apply for them soon. We shall always take pleasure in furnishing them if we have them to spare. (tf)

Particular attention will be given to the procuring of all kinds of Instruments required by Engineers.—Orders must be accompanied with the necessary funds or city acceptances.

### NEW ARRANGEMENT.

#### ROPES FOR INCLINED PLANES OF RAILROADS.

WE the subscribers have formed a co-partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S. Durfee & Co., will be done by the new firm, the same superintendent and machinery are employed by the new firm that were employed by S. S. Durfee & Co. All orders will be properly attended to, and ropes will be shipped to any port in the United States. 12th month, 12th, 1836. Hudson, Columbia County, State of New-York.

ROBT. C. FOLGER.  
GEORGE COLEMAN.  
33—tf

### AMES' CELEBRATED SHOVELS' SPADES, &c.

300 dozens Ames' superior back-strap shovels.  
150 do. do. do. plain do.  
150 do. do. do. cast-steel Shovels & Spades  
150 do. do. do. Gold-mining Shovels.  
100 do. do. do. plated Spades.  
50 do. do. do. socket Shovels and Spades  
Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed), manufactured from Salisbury refined iron—by sale by the manufacturing agents,

WITHERELL, AMES & CO.  
No. 2 Liberty street, New-York.  
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No. 8 State-street, Albany.

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined Iron. v4-tf

**MACHINE WORKS OF ROGERS, KETCHUM AND GROSVENOR,** Paterson, New-Jersey. The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

#### RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles, Springs and Flange Tires; Car Wheels of cast iron, from a variety of patterns, and Chills; Car Wheels of cast iron, with wrought Tires; Axles of best American refined iron; Springs; Boxes and Bolts for Cars.

**COTTON, WOOL, & FLAX MACHINERY,** Of all descriptions and of the most improved patterns, Style, and Workmanship.

Mill Geering and Millwright work generally; Hydraulic and other Presses; Press Screws; Callenders; Lathes and Tools of all kinds; Iron and Brass Castings of all descriptions.

**ROGERS, KETCHUM & GROSVENOR,**  
Paterson, N. J. or 60 Wall-st. New-York  
51tf

#### FRAME BRIDGES.

**THE** undersigned, General Agent of Col. S. H. LONG, to build Bridges, or vend the right to others to build on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish all materials for superstructures of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington; two miles from the former place. Across the Motawamkeag river on the Military road in Maine. On the national road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Paterson Railroad in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contocook river at Henniker, N. H. Across the Souhegan river, at Milford, N. H. Across the Connecticut river, at Hancoc, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesee river, at Squakiehill, Mount Morris, N. Y. Across the White River, at Hartford, Vt. Across the Connecticut River at Lebanon, N. H. Across the mouth of the Broken Straw Creek, Penn. Across the mouth of the Catawagus Creek, N. Y. A Railroad Bridge diagonally across the Erie Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 500 feet in length; one of the spans is over 200 feet. It is probably the *firmest wooden bridge* ever built in America.

Notwithstanding his pre-set engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms.

MOSES LONG,  
Rochester, Jan. 19th, 1837. 4—y

**STEPHENSON,**  
*Builder of a superior style of Passenger Cars for Railroads,*

No. 264 Elizabeth street, near Bleecker street,  
NEW-YORK.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on the New-York and Harlaem Railroad, now in operation.

#### ROACH & WARNER,

Manufacturers of OPTICAL, MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS, 293 Broadway, New-York, will keep constantly on hand a large and general assortment of Instruments in their line.

Wholesale Dealers and Country Merchants supplied with SURVEYING COMPASSES, BAROMETERS, THERMOMETERS, &c. &c. of their own manufacture, warranted accurate, and at lower prices than can be had at any other establishment.

☛ Instruments made to order and repaired.

1y—14

### RAILWAY IRON, LOCOMOTIVES, &c. &c.

THE subscribers offer the following articles for sale:—

Railway Iron, flat bars; with countersunk holes and mitred joints, lbs

350 tons 2by 4, 15 ft in length, weighing 4 1/2 per ft

280 " 2 " 1, " " " 3 1/2 " "

70 " 1 1/2 " 1, " " " 2 1/2 " "

80 " 1 1/2 " 1, " " " 1 3/4 " "

90 " 1 " 1, " " " 1 " "

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments, or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2 1/2, 2 3/4, 3, 3 1/2, 3 3/4, 4, and 5 1/2 inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand Wax.

Also, Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

A highly respectable American Engineer resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron, &c. ordered through us.

A. & G. RALSTEN & CO.,  
Philadelphia, No. 4 South Front-st.

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### ARCHIMEDES WORKS.

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THE undersigned beg leave to inform the proprietors of Rail Roads, that they are prepared to furnish all kinds of Machinery for Rail Roads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Rail Road, none of which have failed.—Castings of all kinds, Wheels, Axles and Boxes, furnished at the shortest notice.

H. R. DUNHAM & CO.  
NEW YORK, February 12th, 1836. 4—ytf

### PATENT RAILROAD, SHIP AND BOAT SPIKES.

\*\*\* The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent) are found superior to any yet ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above-named factory—for which purpose they are found invaluable, as their adhesion is more than double any common Spikes made by the hammer.

\*\*\* All orders directed to the Agent, Troy, N.Y. will be punctually attended to.

HENRY BURDEN, Agent.  
Troy, N.Y., July, 1831.

\*\*\* Spikes are kept for sale, at factory prices, by 1 & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water-street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1J23am H. BURDEN.

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